



Paving Report For 2014

This report outlines the paving and pavement preservation work completed in 2014 and lists the actual, anticipated, and budgeted expenses for fiscal years 2013-14 and 2014-2015.

The Tigard Public Works Department is responsible for the maintenance of 152 miles of paved streets. Maintenance of the paved surface of these streets is primarily accomplished by the Pavement Management Program (PMP) which is funded by the street maintenance fee (SMF). The maintenance strategy for each street varies depending on the adjoining land use, age, average daily volume, heavy vehicle traffic, and character of that street.

Accomplishments for 2014

Pavement projects completed in 2014 by Tigard's Pavement Management Program (PMP) are summarized in the following table and the pavement overlays are shown on the attached map (Attachment A).

Project	2014 Pavement Overlays	2014 Pavement Crack Seal
Street Length Completed	3.4 miles	16 miles
Area Completed (sf)	530,000	2,700,000
Cost (Includes Design and Inspection)	\$1,450,000	\$230,000
Cost Per Mile	\$426,000	\$14,000
Cost Per Square Foot	\$2.74	8 cents

Staff was able to accomplish other paving work using SMF funds in 2014 in coordination with other capital projects including:

- Additional pavement thickness on the Main Street project
- A pavement overlay of Electric Street in conjunction with the Main Street project
- A pavement overlay of a portion of Barrows Road in coordination with the City of Beaverton

Some additional paving was completed by other projects (Main St, Derry Dell, and Walmart).

The remaining funds each year are spent sealing cracks in street pavement, and on pavement inspections and inventory (the source of the Pavement Condition Index or PCI).

The Pavement Condition Index (PCI)

Pavement condition is measured by the PCI, with zero being the poorest condition (total pavement failure) and 100 being the best condition (just constructed pavement). PCI factors include pavement condition, cracking, pavement distress, weathering, structural strength, and smoothness of ride.

Tigard Street Network Condition

2014 has seen the average PCI of Tigard's city streets increase from 70.0 at the end of 2013 to 70.5 at the end of 2014. This was better than the PCI of 70.1 projected a year ago. The PMP's recent investment in preventive maintenance (slurry sealing and sealing cracks in pavement) and strategically timed paving of busy streets (before significant deterioration occurs) have allowed the city to more effectively counter the normal effects of pavement deterioration.

Previous Council Action and the Street Maintenance Fee (SMF)

Pavement maintenance is primarily funded through the City's SMF, a monthly user fee dedicated to the maintenance of existing roadways in Tigard. The fee was recommended by a citizen task force and established by Ordinance No. 03-10 in November 2003.

Council revisited the SMF in 2009 and 2010. Recognizing funding constraints and the difficulties of raising revenue in a recession, Council adopted Resolution No. 10-01 which:

1. Established a long-term PCI goal of 72 to 75. Based on cost estimates, the Council quickly recognized that the level of adopted funding would not be adequate to get to a PCI of 75 and set an interim goal to "hold the line" by maintaining an average PCI of at least 67. Beyond this point, streets require more extensive reconstruction prior to paving, which results in substantially higher street maintenance costs.
2. The ordinance also directs that the SMF be adjusted for inflation. Fee amounts are adjusted based on the methodology originally adopted in Ordinance 10-01, updated in Ordinance 13-06 to a composite of 85 percent of the Engineering News Record (ENR) Construction Cost Index for Seattle, which measures general construction and labor cost, and 15 percent of the Oregon Monthly Asphalt Cement Material Price, which measures asphalt prices and parallels fuel prices. These percentages approximate the percentage cost of a typical project that matches the labor or material price measured by the index. This inflation adjustment increased the fee by 5 percent on January 1, 2015.

Current SMF levels, as they appear in the City's 2014-2015 Master Fees and Charges Schedule, are as follows:

Effective Dates	2014	2015
Residential (Per House or Unit)	\$5.83	\$6.12
Commercial and Industrial (Per Required Parking Space)	\$1.31	\$1.38

Note that the fee for commercial and industrial properties is calculated based on the number of parking spaces that would be required by TMC 18.765 if that building were constructed today (as an approximation of the traffic generation of the site), which is often different from the number of spaces in the existing parking lot.

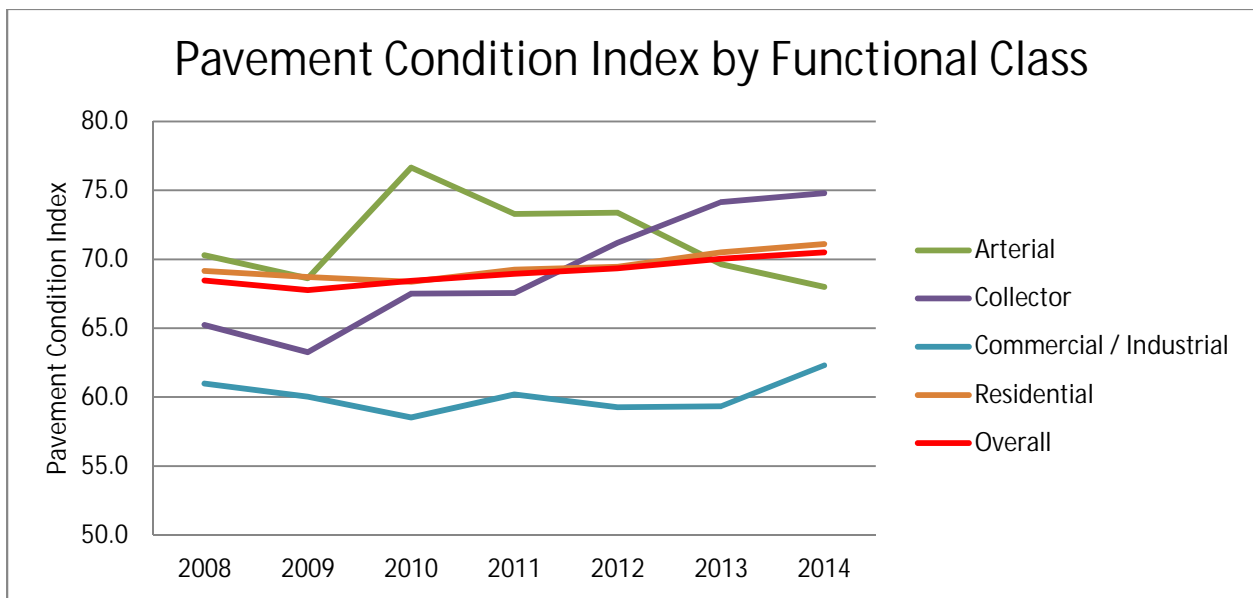
Recent Paving History

Attachment B is a map showing the paving projects that have been completed in the past six years. Pavement overlays have been completed on 20 miles of streets and slurry seals on 64 miles of streets. More than half of Tigard's city street network has been paved or slurry sealed since 2008.

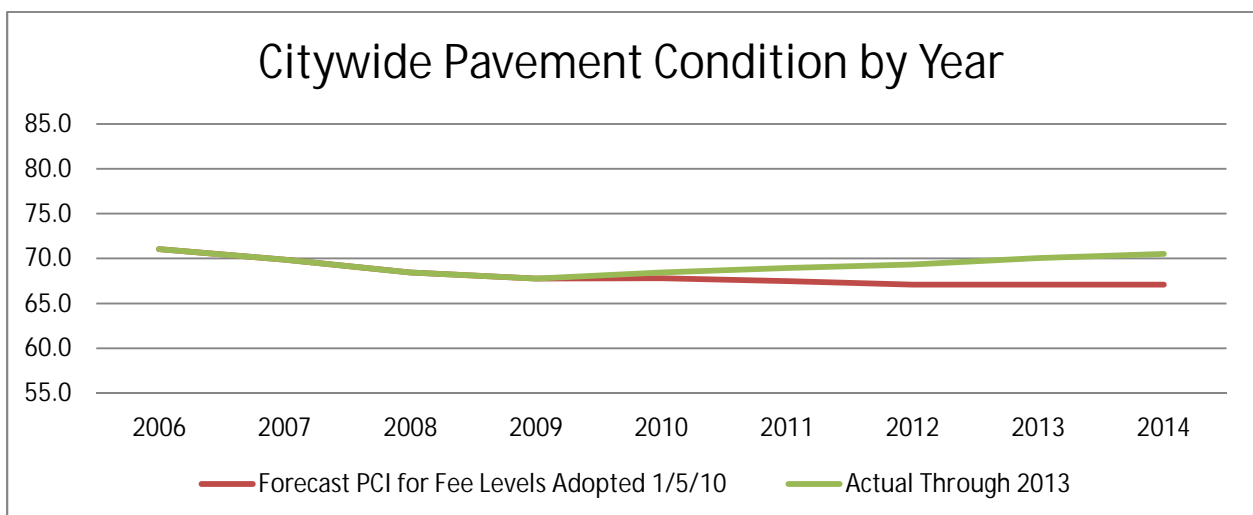
In order to maintain the overall street network in the best possible overall condition, street maintenance work has focused on three main priorities:

1. Crack sealing on major streets to reduce future deterioration.
2. Slurry seals and crack sealing on residential streets. These treatments are a cost-effective way to counter weathering, which is the primary cause of deterioration of lower-volume residential streets
3. Pavement overlays on major corridors. Streets have been prioritized for paving based on their traffic volumes, the cost-effectiveness of a paving project, and the anticipated deterioration that would occur if the street waits another year for paving.

These priorities are reflected in the following graph:



The graph below shows Tigard's systemwide average PCI at the end of each paving season, and compares the actual PCI to those forecast when the SMF changes were adopted in 2010.



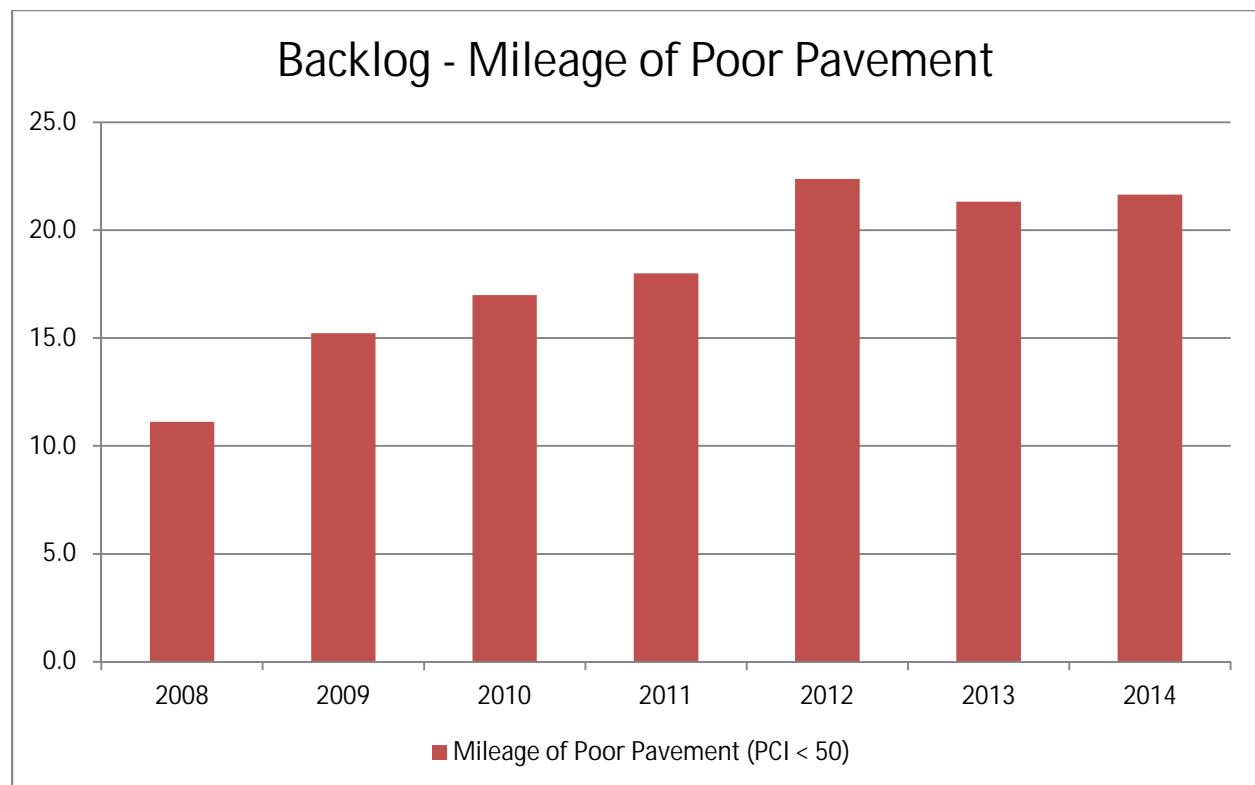
The PCI at the end of the 2014 paving season is 70.5, which is better than the 67.1 forecast in 2010, and better than the 70.1 forecast in 2013. Attachment C is a map showing the pavement condition of Tigard's streets.

Curb Ramp Retrofits (Required by Americans with Disabilities Act)

The Americans with Disabilities Act (ADA) requires that when a street is reconstructed, the curb ramps adjacent to that street must also be reconstructed or retrofit to meet ADA standards. These ramp retrofits are not required in conjunction with maintenance activities. Tigard, like many other local agencies considered pavement surface treatments and overlays to be maintenance activities, since their primary purpose is to maintain the existing paved surface. However, in the fall of 2013, clarifying notice was received from the Federal Highway Administration that pavement overlays do trigger the ADA requirement for ramp retrofits. As a result, Tigard's 2014 pavement overlay project included the retrofit or addition of 50 curb ramps in accordance with ADA standards. The approximate cost of these ramp retrofits was about \$250,000, which is about 17 percent of the total project cost. These requirements are anticipated to continue, and may necessitate a higher percentage of project costs if overlays are done on streets with a higher number of ramps.

Paving Backlog

There are many local streets (both residential and commercial) in Tigard on which the pavement condition has deteriorated beyond the level at which most preventive maintenance treatments can be effective. These streets need more extensive repairs such as pavement overlay and rehabilitation. In pavement management terms, these are called backlog streets. The graph below shows how this backlog has grown in recent years, but is starting to level off.



There are approximately 22 miles of these backlog streets in the Tigard city street system that need paving. This is approximately 14 percent of our total street mileage. The cost to pave these streets would be approximately \$11 million. It is anticipated that the amount of this backlog will remain at about this level now that the SMF increase passed in 2010 is fully phased-in, assuming that revenues and asphalt prices remain relatively consistent, and assuming no additional unfunded mandates affect the program. Additional funding would be necessary to restore these streets to good pavement condition.

Finance Director's Findings

The Finance Director has reviewed this report and future pavement maintenance funding requirements as identified in the PMP. Data has not changed significantly from what the Council considered after the 2009 paving season.

Actual revenue collections for fiscal years 2012-2013 and 2013-2014 were analyzed and they were sufficient to meet the annual funding level set from the street maintenance plan along with the fiscal year 2014-2015 adopted budget. Completion of the SMF phase-in, along with an inflationary adjustment(s), is expected to generate sufficient revenue to fund the PMP in the coming years. The 2015-2019 PMP approved budget is as follows:

Fiscal Year	2015	2016	2017	2018	2019
PMP	\$1,900,000	1,950,000	2,025,000	2,100,000	2,170,000

Additionally, the split between customer types was analyzed to determine if costs were equitably split when compared to revenues collected. The allocation of the costs of the five-year plan is set in TMC 15.20.050 and is summarized as follows:

Road Type	Percentage of Residential Allocation	Percentage of Non-Residential Allocation
Arterial	38%	62%
Local Commercial/Industrial	0%	100%
Collector	50%	50%
Neighborhood/Local	100%	0%

It is important to realize the fee is based on a five-year plan and that there will be variance from one year to the next where one customer group may subsidize another in any given year; the important thing is that the program costs reflect the revenues collected by customer type over the five-year period. If they do not, the TMC instructs the Finance Director to make recommendations based on this review. The following tables summarize my findings:

Customer Class	Total 2013-2014 PMP Expense Related to SMF	Percentage of Total 2013 - 2014 Expense per TMC	Percentage of Revenue Collection	Share of Expenses Based on Revenue Collected	Variance
Residential	\$1,236,112	74%	67%	\$1,113,214	\$123,905
Non-Residential	\$425,394	26%	33%	\$548,299	(\$123,905)
Total	\$1,661,513			\$1,661,513	

Tigard incurred \$1,661,513 in FY 2013-14 in PMP expenses related to the SMF. Based on the types of roads, (arterial, collector, etc.), that received pavement maintenance through the PMP, \$1,236,112 (74 percent) of the PMP expenses should have been born by residential customers and \$425,394 (26 percent) of the PMP expenses should have been born by non-residential customers.

The actual revenues collected in FY 2014 have a slightly different split. Sixty-seven percent of the revenues came from the residential sector and 33 percent of the revenues came from the non-residential sector. Based on the size of the PMP and the way revenues were collected, a more equitable split would have been for \$1,113,214 to come from the residential sector and for \$548,299 to come from the non-residential sector. During the last year, the non-residential sector subsidized the residential sector by \$123,905, or seven percent of the total PMP. The Finance Director does not find this difference to be material enough to necessitate a recalculation. Engineering staff anticipates paving a higher percentage of commercial and industrial streets, arterials, and collectors in the coming years. In the long term, engineering staff estimates that the actual paving expenses will be consistent with the residential/non-residential revenue split.

Future Outlook

If SMF revenue remains relatively consistent over the next few years (accounting for inflation), staff anticipates the Pavement Management Program (PMP) being able to hold the line and keep Tigard's overall average pavement condition at about its current level for the next few years. This assumes that paving cost inflation stays relatively mild (less than 7 percent annual increases) and no significant additional unfunded mandates arise that would add to the cost of paving projects.

Staff anticipates the PMP continuing with the same priorities in the coming years. The program will focus on pavement overlays and pavement crack sealing in the 2015 paving season. Future years are anticipated to continue to include about 3 miles of pavement overlay projects (2 percent of the street network) and about 15 miles (10 percent of the network) of pavement crack sealing. Slurry seal projects of roughly 15 street miles per year are anticipated starting again in 2016, as the slurry seals installed in 2008 reach the end of their anticipated life and as streets paved in the early 2000s become ready for slurry seal. Attachment C is a map of tentative pavement overlay projects over the next five years. Note that significant portions of major Tigard streets are forecast to need pavement overlays within this timeframe.

While the anticipated revenue would be adequate to keep the average pavement condition from getting worse, it is not anticipated to be enough to reduce the backlog of streets that need paving.